Service Definition

The name of the Service is: Geographic Data Management as a Service

An overview of Geographic Data Management as a Service

Geographic Data Management service provides a framework that has everything necessary for location intelligence, spatial analysis and location based services in a simple, fast, accurate and robust service. The service can integrate geo-referenced data, map servers, operational data in a flexible and powerful way allowing statistical and spatial analysis. The service enables organisations with “location intelligence”, “spatial analysis” and “location-based services”.

Location intelligence is the ability to organise and understand complex phenomena through the use of geographic relationships inherent in all information. Allowing the combination geographic data and reference data related to the location of enterprise data (citizens, services, transactions etc). Spatial Analysis is the ability to analyze spatial relationships and geographic characteristics. Location based services are information and transactional services accessible from a mobile device (via a mobile network) using the GPS positioning ability of modern smart phones.

In any government organisation it is imperative achieving the objectives outlined by the strategic plan. That's why is vitally important to have the tools to measure and apply the corrections necessary. The Key Performance Indicators helps to monitor and determine the behavior of the critical factors of an organization. The cloud based service allows allows government organizations to visualise, analyse and track the indicators from a geographical perspective into which is incorporated a dynamic space-time analysis.

Geographic Data Management service is a framework able to integrate operational data, geographical data, historical data (Data Warehouse), public map data, public satellite data and local public data in order to provide tactical analysis. A built in database is used to integrate geographic data with dimension data, operational and management indicators.

Some key capabilities:

- Use public providers for free maps (including ordinance survey data)
- Incorporate and integrate operational data
- Include external information which affect the objectives
- Make this information available on the web
- Get the detail information of indicator on the map
- Capitalize on the advantages that new technologies are offering
- Keep a high level of security
- Integrate several web applications to a maximum benefit (Mashup)
- Use a tailored made application to organisation needs

Some government use cases for the service:
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- Analyse and take control of security policies in each geographic area
- Make epidemiological studies by region
- Obtain quick insight into levels of acceptance
- Locate on the map the effectiveness of public services
- See geographically the application of services and exceptions
- Determine the best use of resources and routes

Some of the unique capabilities are below. The combination of these capabilities are rather unique compared to some other GIS offerings

- Multi layer
- Point layer
- Route Layer
- Zone Layer
- Data Agnostic
- Mash Up
- Easy Development (Business User not IT)
- Access Operational Data
- Business Intelligence
- Data Services API
- Security
- Customized Applications
Deployment Models

How can the service be deployed?

The Geographic Data Management service can be deployed on private or public cloud such as Amazon EC2. On a public cloud there is a single container of the multi-tenant service and shared cloud database.

By partnering with Memset Ltd we offer the Geographic Data Management Services service on a secure private cloud IL2 accredited for G-Cloud. On the secure private cloud deployment each client (organisation) will have a dedicated VM (container) and a dedicated database. The service can be multi-tenant within an organization but with a dedicated container per organization.

Networks to which the service is connected (directly)?

The service is accessible from a browser with an internet SSL connection.

Other networks (PSN, JANET, GSI) can be enabled by working with our partner Memset Ltd.

API access available documented and supported?

SOAP and REST APIs are available.

Open standards documented and supported?

Data interchange is supported through XML and JSON formats. Services can be published as REST and SOAP services supporting a number of WS-* standards. Mashups are also supported with other content and portal frameworks.

Open source used and documented?

<table>
<thead>
<tr>
<th>Function/Purpose</th>
<th>Open Source Components</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating System</td>
<td>Debian Linux</td>
</tr>
<tr>
<td>Application Server</td>
<td>Apache Tomcat</td>
</tr>
<tr>
<td>GIS Database</td>
<td>PostGIS and Postgres</td>
</tr>
<tr>
<td>GIS Server</td>
<td>Map Server, Open Layers (integrates with Ordinance Survey data)</td>
</tr>
<tr>
<td>Java Libraries</td>
<td>ExtJS, JQuery, D3.JS, PHP, Javascript</td>
</tr>
<tr>
<td>Data Services</td>
<td>WSO2 Data Services Server</td>
</tr>
<tr>
<td>Maps Support (OSS)</td>
<td>Open Street Maps</td>
</tr>
</tbody>
</table>

Service Management

Technical boundaries/interfaces of the service documented?

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The Geographic Data Management service interfaces are fully documented for both the role of administrators and end-users.

Services available to other suppliers so they can use them to provide services to government?
The service is available to any other suppliers who wish to leverage the G-Cloud framework.

On-boarding process e.g moving to the service?
An administrator account is created for the organization. The administrator can then create end user accounts. Additionally the on-boarding is provided as a managed service.

The SLA for on-boarding is 24 hours.

Off-boarding process e.g moving off the service?
The administrator can remove the end user accounts and the data. Additionally the off-boarding is provided as a managed service.

The SLA for off-boarding is 72 hours.

Data extraction/removal criteria met?
The criteria are met in accordance with the G-Cloud ITT glossary definition.

Data processing and storage locations defined?
For the G-Cloud the IaaS option available is Memset (located in Guilford, UK).

Outside of the G-Cloud framework a public cloud option is Amazon EC2 (Dublin, Ireland or Virginia, USA) can be provided.

For an IL2 compliant and UK sovereign G-Cloud solution the preferred model is to use Memset cloud.

Data location option can be defined by user?
This is not possible. The organization purchasing through G-Cloud would only have the option of the Memset cloud which is managed in a UK sovereign Tier-3 data centre.

Data centre tier?
Tier-3 UK data centre through our partner Memset Ltd.

Support boundaries/interfaces documented?
This is defined in the support guide.
Service roadmap provided?

The next release of the service is scheduled for Q4 2012 and will include:

- Advanced visualizations for end-users based on the D3.JS data driven documents.
- The service should be IL2 assurance certified providing information assurance to store data to the PROTECT level.
- Tighter integration with UK ordinance survey data

Performance attributes defined and documented?

Performance uptime and response time are documented in the support guide. Database and VM servers are constantly monitored.

Backup & Disaster Recovery?

The instance is backed up with nightly snapshots. Databases are constantly monitored.

Is a support service provided and documented?

The support service is documented in the support guide.

Real-Time management information available?

Management information is provided in a monthly report. Real-time monitoring of the map services server and the GIS database is provided through API and web pages.

Self service provisioning/de-provisioning?

This is partially supported. The service itself is provisioned by vendor. But the end users can be added and removed by the client’s administrator.

Time for provisioning/de-provisioning documented?

24 hours for on-boarding and 72 hours for off-boarding. Administrators can add end-users in less than a minute.

Service desk can be used by 3rd party suppliers?

The service can be used by any 3rd party suppliers in the G-Cloud framework.

Commercial

Unit based pricing model?

The service pricing is £70 per user per month. A minimum of 100 users £7,000 monthly service fee. Excluding VAT.
The database storage is up to 250 GB of data with additional data £200/month for 100GB. Excluding VAT.

*Aggregated billing?*

Billing options can be provided for organizations with multiple departments.

*Minimum Contract/Billing Period?*

12 months at £7,000/month for a total £84,000 contract value. Excluding VAT.

*Free Option?*

A free option is not standard offering on the G-Cloud

*Trial Option?*

A trial option can be provided on public cloud (shared container, muti-tenant). The fee would be £1000/month. Minimum term for a trial service subscription is 3 months £3,000. Data is limited to 20GB. Excluding VAT.

*Termination Costs?*

If terminated within the 12 month term then the remainder of the annual fees will be billed. If terminated at the end of the term then there is no cost. Trial subscriptions can't be terminated.

*Supplier contract terms/jurisdiction?*

Cloud Intelligence Services Ltd and Amtex Solutions Ltd are located in the UK under jurisdiction of English law. The IaaS provider is also located in England.
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Payment Options?
Purchase Order and BACS are supported

Data Visualization

Authorized users may store datasets?
This is core functionality. Data is uploaded to the cloud GIS database.

Authorised users may make datasets public?
This functionality can be enabled using API Manager publishing data as an API (SOAP/XML or REST/JSON)

Part of an integrated collaborative tool set?
The service is not part of a collaboration tool although API can be integrated into other collaborative tools or workflow processes. Additional support for WS-BPEL and WS-HT can be provided to support collaborative workflow processes.

Publish datasets as visualizations?
This is core functionality

End users may search for datasets?
Search is not part of the current functionality

Types of display?
Maps and chart objects. Various mashups are supported.

Maximum dataset size?
The standard embedded data storage for the service is 250GB although federated access is available to any data set.

Specialist Cloud Services - Generic

Do you provide vendor specific services?
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Services are provided for the implementation of the Data service and connectivity.

*If the vendor(s) have accreditation are you accredited?*

UK G-Cloud IaaS partner provider Memset Ltd has a number of accreditations and certifications e.g ISO 9001, ISO 14001, ISO 27001. Amtex Systems has ISO 9001 certificate for IT enabled services, business process outsourcing, software testing, data integration and reporting.

*Vendor accreditation?*

We will submit the Service for IL2 accreditation in the near future.
Service Levels

Platform IaaS provider partner Memset Ltd has a 99.995% uptime guarantee for networks, servers and storage. 24x7 support is provided for the IaaS and this support is wrapped into the Geographic Data Management service support levels.

For the Geographic Data Management service production support is provided 24x7x365. Incidents are submitted via e-mail and/or telephone. The target response and resolution times for incidents are:

<table>
<thead>
<tr>
<th>Severity Level</th>
<th>Response Time</th>
<th>Resolution Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1 hour</td>
<td>24 hours</td>
</tr>
<tr>
<td>2</td>
<td>4 hours</td>
<td>48 hours</td>
</tr>
<tr>
<td>3</td>
<td>8 hours</td>
<td>72 hours</td>
</tr>
<tr>
<td>4</td>
<td>24 hours</td>
<td>None</td>
</tr>
</tbody>
</table>

The severity levels are defined based on impact on a production usage of the service in the table below: “Production” is defined as is one by end users where a failure of the service in production will have immediate economic impact on the client’s business operations.”

<table>
<thead>
<tr>
<th>Severity Level</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Client’s business operations have been disrupted either through a loss of data or a loss of service.</td>
</tr>
<tr>
<td>2</td>
<td>Client’s business operations can continue in a restricted fashion. Client’s business operations are at risk.</td>
</tr>
<tr>
<td>3</td>
<td>Some aspects of the service are impaired but client can continue to use the service. Client’s business operations are at minimal risk.</td>
</tr>
<tr>
<td>4</td>
<td>General usage questions, requests for new features or documentation issues.</td>
</tr>
</tbody>
</table>
Termination Options

Clients may terminate the production service with 30 days notice for any reason, subject to full payment of remaining SaaS fees for the 12 month subscription period.

Trial service cannot be terminated. Client will be invoiced the full amount for the 3 month trial in advance.

Vendor can terminate the production service at the end of the initial 12 month subscription period for any reason, with 90 days notice.

Data Restoration/Service Migration

Data restoration is provided by vendor for recovering from backups. Daily snapshots are taken with options to restore from the automated backups.

Service migration can be provided as a service through an export of the database environment or a migration of the complete VM onto another cloud instance.

Customer Responsibilities

The client responsibilities are set out in the support guide.

More Information

More information on the service can be found at www.cloudintelligenceservices.co.uk